

CLAIMS:

1. A routing component comprising:
a first interface to communicate data with a first network interface;
5 a second interface to communicate data with a second network interface; and
an embedded memory to buffer data communicated from the first interface to the
second interface.
2. The routing component of claim 1, further comprising an interface to an
10 external memory for buffering data communicated from the second interface to the first
interface.
3. The routing component of claim 2, wherein the external memory has a greater
storage capacity than the embedded memory.
4. The routing component of claim 1, wherein the first interface comprises a
wide area network (WAN) interface.
5. The routing component of claim 1, wherein the second interface comprises a
20 switch fabric interface.
6. The routing component of claim 5, wherein the switch fabric interface
communicates crossbar data.
7. The routing component of claim 1, wherein the routing component is
25 implemented using an application specific integrated circuit (ASIC).
8. The routing component of claim 1, wherein the embedded memory comprises
a random access memory (RAM).

9. A network element comprising:
a first network interface to communicate data with a network;
a second network interface to communicate data with the network; and
a router having an embedded memory to store data communicated using the second
5 network interface.

10. The network element of claim 9, further comprising a second memory, in
communication with the router, to store data communicated using the first network interface.

10 11. The network element of claim 10, wherein the second memory has a greater
storage capacity than the embedded memory.

12. The network element of claim 9, wherein the first network interface comprises
a wide area network (WAN) interface.
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13. The network element of claim 9, wherein the second network interface
comprises a switch fabric interface.

14. The network element of claim 13, wherein the switch fabric interface
communicates crossbar data.
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15. The network element of claim 9, wherein the router is implemented using an
application specific integrated circuit (ASIC).

25 16. The network element of claim 9, wherein the embedded memory comprises a
random access memory (RAM).

17. The network element of claim 9, further comprising a second router having an
embedded memory to store data communicated using the second network interface.

18. An integrated circuit (IC) comprising:

a first interface to communicate data with a network;

a second interface to communicate data with the network;

an embedded memory internal to the IC to buffer data communicated using the

5 second interface; and

an interface to a memory external to the IC for buffering data communicated using the first interface.

19. The IC of claim 18, wherein the memory external to the IC has a greater
10 storage capacity than the embedded memory.

20. The IC of claim 18, wherein the first interface is coupled to a wide area
network (WAN) interface.

21. The IC of claim 18, wherein the second interface is coupled to a switch fabric.
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22. The IC of claim 21, wherein the switch fabric comprises a crossbar.

23. The IC of claim 18, wherein the embedded memory comprises a random
20 access memory (RAM).

24. A router comprising:

an integrated circuit (IC) comprising

a first interface to communicate data with a network;

a second interface to communicate data with the network;

5 an embedded memory to buffer data communicated using the second interface; and

an interface to a memory external to the IC for buffering data from the first interface.

10 25. The router of claim 24, wherein the memory external to the IC has a greater storage capacity than the embedded memory.

26. The router of claim 24, wherein the first interface is coupled to a wide area network (WAN) interface.

15 27. The router of claim 24, wherein the second interface is coupled to a switch fabric.

28. The router of claim 26, wherein the switch fabric comprises a crossbar.

20 29. The router of claim 24, wherein the embedded memory comprises a random access memory (RAM).

30. A method for communicating data using a network router, the method comprising:

- receiving data from a first interface;
- storing the data in a memory device external to the network router;
- 5 selecting a route for transmitting the data; and
- storing the data in an embedded memory.

31. The method of claim 30, wherein the memory external to the network router has a greater storage capacity than the embedded memory.

32. The method of claim 30, wherein the first interface comprises a wide area network (WAN) interface.

33. The method of claim 30, further comprising transferring the data over a switch fabric interface.

34. The method of claim 33, wherein the switch fabric interface communicates crossbar data.

35. A routing arrangement comprising:

a crossbar arrangement;

a plurality of routing components coupled to the crossbar arrangement, at least one of the routing components comprising

5 a first interface to communicate data with a network;

a second interface to communicate data with the crossbar arrangement;

an embedded memory to buffer data communicated with the crossbar arrangement; and

10 an external memory interface to a memory external to the routing device for buffering data communicated with the network.